

The system and method of the present invention provides a record of the flight performance of an aircraft and the performance of the engine. A plurality of sensors sense engine conditions and generate engine data. A ground data link unit is positioned within the aircraft and receives the engine data. At initial take-off, a spread spectrum transmitter downloads the engine data to an airport based spread spectrum receiver that receives the spread spectrum communication signal from the aircraft upon initial take-off and demodulates the spread spectrum communication signal to obtain the engine data after initial take-off. The ground data link unit can also include a data store that is operative to accumulate and store flight performance data during flight of the aircraft. The spread spectrum transceiver is coupled to the data store and can download the flight performance data after the aircraft has landed at its destination airport.